

CALIFORNIA CODE OF REGULATIONS
TITLE 14. DIVISION 1
SUBDIVISION 4, OFFICE OF OIL SPILL PREVENTION AND RESPONSE
CHAPTER 7. ENFORCEMENT
SUBCHAPTER 2. DETERMINING AMOUNT OF
PETROLEUM HYDROCARBONS RECOVERED
SECTIONS 877 – 880

Effective August, 1997

Article 1. General Provisions and Definitions.

877 Purpose and Scope.

The regulations in this subchapter set forth the methods for determining the amount of liquid petroleum hydrocarbons recovered. These methods will be used to determine the number of gallons of discharged liquid petroleum hydrocarbon that are recovered and properly disposed of in accordance with applicable law. The term "disposed of" shall include liquid petroleum hydrocarbon that is reprocessed, recycled, or otherwise utilized as an ingredient in the manufacture of petroleum products or other products.

Authority: Section 8670.67.5, Government Code.

Reference: Section 8670.67.5, Government Code.

877.1 Exception.

- (a) Unless otherwise agreed to, the amount of petroleum hydrocarbons recovered shall be determined pursuant to Sections 877.3, 878, 879 and 880. The Responsible Party and the Administrator may use an alternative method to the method described in these sections. This alternative method shall be agreed to at the time of the incident and shall be included in the Incident Action Plan or as an attachment thereto.
- (b) Notwithstanding Section 877.1(a), the Administrator and Responsible Party or potentially Responsible Party shall not be precluded from entering into a binding agreement whereby the parties stipulate to the amount of oil spilled and/or recovered. Such agreement shall be binding on the parties for purposes of a civil penalty action. Stipulations may be entered into where the parties determine that it is in the interest of justice to do so to facilitate resolution of the response.

Authority: Section 8670.67.5, Government Code.

Reference: Section 8670.67.5, Government Code.

877.2 Definitions.

In addition to the definitions provided by Section 790 of Title 14, the following definitions shall govern this subchapter. These definitions shall supersede any duplication in Section 790, Title 14:

- (a) "API" refers to the American Petroleum Institute. The American Petroleum Institute, in conjunction with the American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), British Standards Institute (BSI) and the Institute of Petroleum (IP), has developed standardized methods and formulas to calculate measured quantities of petroleum fluids regardless of point of origin, destination or unit of measure used by custom or statute.
- (b) "ASTM" refers to the American Society for Testing and Materials. It is a scientific and technical organization formed for the development of standards on characteristics and performance of materials, products systems and services.

- (c) "EPA" refers to the United States Environmental Protection Agency.
- (d) "EPA Method 8015A" is a procedure used to determine the concentration of various volatile organic compounds. EPA Method 8015A, Nonhalogenated Volatile Organics by Gas Chromatography, July 1992, is hereby incorporated by reference.
- (e) "EPA Method 8270B" is a procedure used to determine the concentration of semi-volatile organic compounds. EPA Method 8270B, Semi-volatile Organic Compounds by Gas Chromatography/Mass Spectrometer (GC/MS): Capillary Column Technique, September 1994, is hereby incorporated by reference.
- (f) "EPA Method 3550A" is a procedure used for extracting non-volatile and semi-volatile organic compounds from solids such as soils, sludges and wastes. EPA Method 3550A, Ultrasonic Extraction, September 1994, is hereby incorporated by reference.
- (g) "EPA Method 3540B" is a procedure used for extracting non-volatile and semi-volatile organic compounds from solids such as soils, sludges and wastes. EPA Method 3540B, Soxhlet Extraction, September 1994, is hereby incorporated by reference.
- (h) "Flame Ionization Detector (FID)" is a detector, used in combination with a Gas Chromatograph, to analyze for saturated hydrocarbons, alkanes, alkenes and unsaturated hydrocarbons.
- (i) "Gas Chromatography (GC)" is an analytical technique used to determine the sample concentration of organic constituents including total petroleum hydrocarbons (TPH) in environmental media.
- (j) "Gauge" refers to the act of manually measuring the height of liquid in a tank expressed in feet, inches and fractions of inches or other appropriate units.
- (k) "Incident Action Plan" is a document that contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The Plan may be oral or written.
- (l) "Recover" or "Recovered" refers to the amount of oil either removed or taken out of the environment after a spill. This does not include material lost to natural evaporation, or dispersion, in situ burning, or the use of chemical dispersants.
- (m) "Sorbents" refers to manmade substances or materials that preferentially absorb or adsorb petroleum hydrocarbons. Sorbents typically include but are not limited to booms and pads.
- (n) "TPH" refers to total petroleum hydrocarbons. It is a term used to describe the amount of petroleum hydrocarbons which are contained in a solid sample or sediment as a number that may be converted to units of volume or mass.

Authority: Section 8670.67.5, Government Code.

Reference: Section 8670.67.5, Government Code.

877.3 Recovery of Liquid Petroleum Hydrocarbons.

- (a) All material shall be collected and stored at locations that shall be identified and approved by the Unified Command as defined in Section 790(c)(3), Title 14. prior to use.
- (b) A storage location conforming to approved methods for the storage of liquid petroleum

hydrocarbons (LPH), which is a measured volume of recovered product or crude oil, shall be pre-identified and verified by the Unified Command (UC) as empty. If it is necessary to use a storage location that already contains LPH, water, or a combination of both, the type of product shall be determined and sampled according to API approved standards in advance and pre-gauged using API approved gauging methods. The petroleum hydrocarbon mixture shall be collected and separated. Gauge readings shall be taken until two (2) gauge readings are identical.

- (c) The total volume of liquid petroleum hydrocarbons recovered shall be designated at V1.

Authority: Section 8670.67.5, Government Code.

Reference: Section 8670.67.5, Government Code.

878. Sampling Analysis and Calculation of Petroleum Hydrocarbons in Contaminated Sediment.

- (a) All contaminated material shall be collected and stored at locations that shall be identified and approved by the Unified Command prior to use.
- (b) The Unified Command, or their representatives, shall develop a statistically sound sampling and analysis plan, agreed upon by all parties, that shall be used in quantifying recovered petroleum hydrocarbons. At a minimum, the sampling plan shall include, but not be limited to, the number of samples to be collected, the sampling methodology to be used, and the methods for quantifying sediment and TPH, and moisture.
- (c) Samples shall be collected in pre-cleaned glass containers. Samples shall not be collected in plastic containers.
- (d) For the TPH extraction method, applicable EPA or ASTM methods, such as EPA Method 3550A, shall be used.
- (e) For quantification of TPH, applicable EPA or ASTM methods, such as EPA Method 8015A by gas chromatography flame ionization detector or EPA Method 8270B shall be used.
- (f) The following calculation shall be used to determine the total amount of petroleum hydrocarbons:

Vs = volume of petroleum hydrocarbons recovered in contaminated sediment

Ws = total weight of sediment

Cs = concentration of petroleum hydrocarbons in sediment (from TPH analysis)

Dp = density of petroleum hydrocarbon

$$Vs = (Ws) \times (Cs) \times (1/Dp)$$

Authority: Section 8670.67.5, Government Code.

Reference: Section 8670.67.5, Government Code.

879. Sorbents and Debris.

- (a) All contaminated material shall be collected and stored at locations that shall be identified and approved by the Unified Command prior to use. Sorbents and Debris shall be segregated.

(b) **Boom and Sorbents.**

The following methods may be used to determine the amount of recovered petroleum hydrocarbons:

(1) **Alternative Number 1.**

- (A) The petroleum hydrocarbons and water shall be extracted using pressure or other extraction method. A water deluge may be used to effect this process, subsequent to approval by the Unified Command. The petroleum hydrocarbon mixture shall be collected and separated. The petroleum hydrocarbons shall be gauged using API approved gauging methods. Gauge readings shall be taken until two (2) gauge readings are identical.

(2) **Alternative Number 2.**

- (A) The Unified Command, or their representatives, shall develop a statistically sound sampling and analysis plan, agreed upon by all parties, that shall be used in quantifying recovered petroleum hydrocarbons. At a minimum, the sampling plan shall include, but not be limited to, the number of samples to be collected, and the sampling methodology to be used and the methods for quantifying the sorbent, TPH and moisture.
- (B) Samples shall be collected in pre-cleaned glass containers. Samples shall not be collected in plastic containers.
- (C) For the TPH extraction method, applicable EPA or ASTM methods, such as EPA Method 3550A, shall be used.
- (D) For quantification of TPH, applicable EPA or ASTM methods, such as EPA Method 8015A by gas chromatography flame ionization detector or EPA Method 8270B shall be used.
- (E) The following calculation shall be used to determine the total amount of petroleum hydrocarbons:

| | | |
|-----|---|--|
| Vsb | = | volume of petroleum hydrocarbons recovered in sorbents |
| Cp | = | concentration of petroleum hydrocarbons reported in sorbent pads as TPH |
| Cb | = | concentration of petroleum hydrocarbons reported in sorbent boom as TPH |
| Co | = | concentration of petroleum hydrocarbons reported in sorbent type other than booms or pads as TPH |
| Wp | = | total weight of sorbents pads |
| Wb | = | total weight of boom |
| Wo | = | total weight of other sorbent type |
| Dh | = | density of petroleum hydrocarbons |

$$Vsb = \{[(Cp) \times (Wp)]\} + \{[(Cb) \times (Wb) + (Co \times Wo)] \times (1/Dh)$$

(c) **Debris.**

The following methods may be used to determine the amount of recovered petroleum hydrocarbons:

(1) Alternative Number 1.

- (A) The oily debris shall be washed using water deluge, subsequent to approval by the Unified Command. The petroleum hydrocarbon and water mixture shall be collected and separated. The petroleum hydrocarbons shall be gauged using API approved gauging methods. Gauge readings shall be taken until two (2) gauge readings are identical.**

(2) Alternative Number 2.

- (A) The oily debris shall be collected and homogenized (by grinding or equivalent to effect total homogenization).**
- (B) The Unified Command, or their representatives, shall develop a statistically sound sampling and analysis plan, agreed upon by all parties, that shall be used in quantifying recovered petroleum hydrocarbons. At a minimum, the sampling plan shall include, but not be limited to, the number of samples to be collected, and the sampling methodology to be used and the methods for quantifying the oily debris, TPH and moisture.**
- (C) Samples shall be collected in pre-cleaned glass containers. Samples shall not be collected in plastic containers.**
- (D) For the TPH extraction method, applicable EPA or ASTM methods, such as EPA Method 3550A, shall be used.**
- (E) For quantification of TPH, applicable EPA or ASTM methods, such as EPA Method 8015A by gas chromatography flame ionization detector or EPA Method 8270B shall be used.**
- (F) The following calculation shall be used to determine the total amount of petroleum hydrocarbons:**

Vpd = volume of petroleum hydrocarbons recovered in debris
Cpd = concentration of petroleum hydrocarbons reported as TPH
Wd = total weight of debris
Dh = density of petroleum hydrocarbon

$$\mathbf{Vd = [(Cpd) \times (Wd)] \times (1/Dh)}$$

Authority: Section 8670.67.5, Government Code.

Reference: Section 8670.67.5, Government Code.

879.5 (Reserved)

880. Calculation for Total Recovery of Petroleum Hydrocarbons.

(a)The total recovery of petroleum hydrocarbons (Vr) shall be the sum of the total volume of petroleum hydrocarbons from contaminated sediment (Vs), sorbents (Vpsb), and debris (Vpd), and liquid petroleum hydrocarbons (V1) reported in gallons.

$$\mathbf{Vr = Vs + Vpsb + Vpd + V1}$$

Authority: Section 8670.67.5, Government Code.
Reference: Section 8670.67.5, Government Code.